hp StorageWorks
HA-Fabric Manager

Product Version: HAFM SW v08.02.00

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Part Number: AA–RV1MA–TE/958–000384–000

This document describes procedures for upgrading hp StorageWorks High Availability Fabric Manager software to v8.x. It also provides an overview and comparison of features available in HAFM v8.x and HAFM v7.x.

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About this Guide

This guide provides information to help you transition from earlier versions of HP StorageWorks High Availability Fabric Manager (HAFM) to HAFM 8.0.

"About this Guide" topics include:

- Overview, page 8
- Conventions, page 9
- Rack Stability, page 11
- Getting Help, page 12

Overview

This section covers the following topics:

- Intended Audience
- Related Documentation

Intended Audience

This book is intended for use by system administrators and service technicians who are experienced with the following:

- Fibre Channel technology.
- StorageWorks Fibre Channel switches by Hewlett-Packard.

Related Documentation

For a list of corresponding documentation included with this product, see the Related Documents section of the HP StorageWorks Release Notes.

For the latest information, documentation, and firmware releases, please visit the HP StorageWorks web site:

http://h18006.www1.hp.com/storage/saninfrastructure.html

For information about Fibre Channel standards, visit the Fibre Channel Industry Association web site, located at http://www.fibrechannel.org

Conventions

Conventions consist of the following:

- Document Conventions
- Text Symbols
- Equipment Symbols

Document Conventions

This document follows the conventions in Table 1.

Table 1: Document conventions

Convention	Element
Blue text: Figure 1	Cross-reference links
Bold	Menu items, buttons, and key, tab, and box names
Italics	Text emphasis and document titles in body text
`Monospace font`	User input, commands, code, file and directory names, and system responses (output and messages)
`Monospace, italic font`	Command-line and code variables
Blue underlined sans serif font text (http://www.hp.com)	Web site addresses

Text Symbols

The following symbols may be found in the text of this guide. They have the following meanings:

> **WARNING:** Text set off in this manner indicates that failure to follow directions in the warning could result in bodily harm or death.

> **Caution:** Text set off in this manner indicates that failure to follow directions could result in damage to equipment or data.

> **Tip:** Text in a tip provides additional help to readers by providing nonessential or optional techniques, procedures, or shortcuts.

> **Note:** Text set off in this manner presents commentary, sidelights, or interesting points of information.

Equipment Symbols

The following equipment symbols may be found on hardware for which this guide pertains. They have the following meanings:

Any enclosed surface or area of the equipment marked with these symbols indicates the presence of electrical shock hazards. Enclosed area contains no operator serviceable parts.

WARNING: To reduce the risk of personal injury from electrical shock hazards, do not open this enclosure.

Any RJ-45 receptacle marked with these symbols indicates a network interface connection.

WARNING: To reduce the risk of electrical shock, fire, or damage to the equipment, do not plug telephone or telecommunications connectors into this receptacle.

Any surface or area of the equipment marked with these symbols indicates the presence of a hot surface or hot component. Contact with this surface could result in injury.

WARNING: To reduce the risk of personal injury from a hot component, allow the surface to cool before touching.
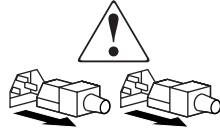
Power supplies or systems marked with these symbols indicate the presence of multiple sources of power.

WARNING: To reduce the risk of personal injury from electrical shock, remove all power cords to completely disconnect power from the power supplies and systems.

Any product or assembly marked with these symbols indicates that the component exceeds the recommended weight for one individual to handle safely.

WARNING: To reduce the risk of personal injury or damage to the equipment, observe local occupational health and safety requirements and guidelines for manually handling material.

Rack Stability

Rack stability protects personnel and equipment.

WARNING: To reduce the risk of personal injury or damage to the equipment, be sure that:

- The leveling jacks are extended to the floor.
- The full weight of the rack rests on the leveling jacks.
- In single rack installations, the stabilizing feet are attached to the rack.
- In multiple rack installations, the racks are coupled.
- Only one rack component is extended at any time. A rack may become unstable if more than one rack component is extended for any reason.

Getting Help

If you still have a question after reading this guide, contact an HP authorized service provider or access our web site: http://www.hp.com.

HP Technical Support

Telephone numbers for worldwide technical support are listed on the following HP web site: http://www.hp.com/support/. From this web site, select the country of origin.

Note: For continuous quality improvement, calls may be recorded or monitored.

Be sure to have the following information available before calling:

- Technical support registration number (if applicable)
- Product serial numbers
- Product model names and numbers
- Applicable error messages
- Operating system type and revision level
- Detailed, specific questions

HP Storage Web Site

The HP web site has the latest information on this product, as well as the latest drivers. Access storage at: http://www.hp.com/country/us/eng/prodserv/storage.html. From this web site, select the appropriate product or solution.

HP Authorized Reseller

For the name of your nearest HP authorized reseller:

- In the United States, call 1-800-345-1518
- In Canada, call 1-800-263-5868
- Elsewhere, see the HP web site for locations and telephone numbers: http://www.hp.com.

Upgrading to HAFM 8.x

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This chapter provides instructions and considerations for upgrading software and migrating data from HAFM 6.x or 7.x to HAFM 8. Information is also included on configuration tasks that you should perform after upgrading.

This chapter includes:

- HAFM Platform, page 14
- HAFM 8 Features, page 15
- Remote Client System Requirements, page 19
- Upgrade Considerations, page 22
- Upgrade and Migration Procedures, page 24
- Migrating Data after Initializing HAFM 8.x, page 32
- Data Migrated, page 34
- Post-Upgrade Configuration Tasks, page 37
- Reverting to Prior HAFM Version, page 39
- Product License and Feature Keys, page 40

HAFM Platform

HP StorageWorks High Availability Fabric Manager (HAFM) 8.x is supported only on the 1U-high rack-mount HAFM appliance. Due to memory and other limitations of previous notebook server platforms, you cannot install HAFM 8.x on a notebook sever. The HAFM appliance is required for release 8.x and all future HAFM releases.

The HAFM appliance and related applications provide a GUI to monitor and manage HP products. The HAFM appliance is a dedicated hardware and software solution that should not be used for other tasks. HP tests the HAFM application installed on the HAFM appliance, but does not test for compatibility with other, third-party software.

> **Caution:** Modifications to the HAFM appliance hardware or installation of additional software (including patches or service packs) may interfere with normal operation.

Figure 1 shows the 1U-high rack-mount HAFM appliance.

Figure 1: 1U-high rack-mount HAFM appliance

HAFM 8 Features

HAFM 8.x is based on a new software architecture that provides many improvements over HAFM 7.x and prior versions. The new architecture provides increased flexibility and optional functions, in addition to preserving all the features that you have found valuable for monitoring and managing switches, directors, and fabrics in a storage area network (SAN).

Key Highlights

Some key highlights of HAFM 8.x include:

■ All the functionality of the previous HAFM versions, which includes the HP Element Managers—previously called "Product Managers."

■ Significant user interface enhancements, along with more flexibility and control for users and administrators.

■ A modular architecture that allows new optional functions and enhancements.

HAFM Enhancements

Some of the enhancements that you will notice in this version compared to previous HAFM versions are:

Redesigned User Interface - Provides a much cleaner look and feel. Also contains easier navigation features and fewer dialog boxes.

Improved Zoning Interface - Zones and zone sets are created and other zoning functions are performed in one dialog box.

Improved Import and Export Functions - You can import and export SAN information to disk and to an E-mail address.

Centralized Product List - Provides a single list where you can view firmware levels, serial numbers, product properties and modify nicknames. You can export the Product List in tab-delimited format. To view an exported Product List in table format, open it in E-mail Excel.

Nicknames - Exports the product nicknames along with their world wide names (WWNs).

Preferred Path Support - Feature provided through the Element Manager that allows you to a define preferred path through a fabric between two attached devices.

For more detailed information on the differences between HAFM 7.x and HAFM 8.x, see "Comparing HAFM 7.x and 8.x Features" on page 45.

Important Notes

Be aware of the following:

- You should not use more than one copy of HAFM to monitor and manage the same devices in a subnet. Loss of HAFM functions, panic reboots from devices, and other problems may result.

- Running HAFM 8.x and earlier versions of HAFM concurrently is not recommended. Results could be unpredictable and undesirable.

Upgrade Scenarios

This guide provides information on upgrading HAFM software for the following situations:

- Upgrading an existing HAFM appliance to HAFM 8.x.

- Replacing a notebook server running HAFM 7.x or 6.x with an HAFM appliance running HAFM 8.x.

Feature Details

This section provides details about HAFM 8.x standard and optional features.

Standard Features

Following are descriptions of some of the standard enhanced base features:

Role-Based Access Control - Allows you to define specific user types and assign rights to those types. This allows better management of administrative workloads by assigning responsibilities and areas of management to specific administrators and users.

User-Defined Groups and Views - Ability to create customized views by grouping and labeling managed elements based on specific environments and user needs. This provides better use of screen real-estate for managing large and multiple fabrics.

Reports - Ability to generate and export reports. You can generate the following reports:

- Product List. Lists the Product List, which has detailed information about the products in the SAN.

- Operating Status Change. Lists status change for products in the SAN, including the number of products online and offline, the product with the most downtime, and details about each product's status.

- Physical Map. Displays a graphic of the SAN's topology.

- Port Usage. Lists the number of used ports in the SAN as well as detailed usage information for each port.

- Fabric Ports. Lists fabric details, including port and director utilization and individual product

Improved Import and Export Functions - You can import and export SAN information to disk and to an E-mail address. The exported files include SAN Files, Physical Map, Product List, reports, Nicknames, XML topology, and status. The Physical Map can be exported to a `.gif` file.

Greater Scalability - Ability to manage a greater number of fabric ports and switching devices. This also will allow HAFM appliance consolidation in many cases as well as the ability to manage more and larger fabrics.

Master Log - This displays on the HAFM desktop. It contains information on all events that have occurred on the SAN including the event type, description, time of occurrence, IP address of where event occurred, node and port name where event occurred, and level of severity.

SNMP Agent - The simple network management protocol (SNMP) agent instruments the objects defined in the Fibre Channel Management (FCMGMT) Management Information Base (MIB) Version 3.1 and a small number of objects defined in MIB II. Through instrumentation of these MIB objects, the agent acts as a translator of information stored on the HAFM appliance into a form usable by SNMP management stations. Using HAFM dialog boxes, you can configure network addresses and community names for up to 12 SNMP trap recipients, which receive messages through SNMP for specific events that occur on the HAFM appliance.

Future Enhancements - Ability to add on new optional features and software modules.

Optional Features

Following are descriptions of optional features that require purchase of a license key.

Event Management - Ability to define and monitor specific conditions and events within the fabric, and then trigger actions, such as reports, E-mail, data export, logs, messages, and sound. This can help automate routine tasks and reduce the amount of manual intervention necessary to manage the SAN.

Performance Monitoring - Ability to measure and graphically display performance statistics, historic data and future trends of every switch port on your SAN. This allows you to pinpoint areas of over-utilization and under-utilized ports and identify trends and problem areas.

SAN Planning - This feature allows you to evaluate the effects of a new device deployment or plan for a completely new storage network using a set of best-practice configuration rules. This can enable you to design a scalable, cost-effective storage network for specific requirements.

Remote Client System Requirements

You can install HAFM client software on remote computers and log into the HAFM appliance to control and monitor SAN components. Verify that remote systems where you will install the client software meet the following requirements:

Table 2: Windows System Requirements for Remote Client

Item	Requirement
Processor	700 MHz Intel Pentium III and up
Hardware	CD-ROM
Operating System	■ Windows XP with service pack 1a ■ Windows 2003 ■ Windows 2000 Professional with service pack 3 ■ Windows NT 4.0 with service pack 6a
Memory	512 MB RAM (minimum)
Disk Space	150 MB disk space
Video Requirements	8 MB Video RAM
Resolution	256 colors

Table 3: Solaris System Requirements for Remote Client

Item	Requirement
Models	Ultra 10 and up
Processor	UltraSparc IIi or greater
Hardware	CD-ROM
Operating System	Solaris 7, Solaris 8
Memory	512 MB RAM (minimum)
Disk Space	350 MB disk space
Video Requirements	8 MB Video RAM
Resolution	256 colors

Table 4: LINUX System Requirements for Remote Client

Item	Requirement
Processor	1 GHz Intel Pentium III and up
Hardware	CD-ROM
Operating System	Red Hat 7.3 and Red Hat 9
Memory	512 MB RAM (minimum)
Disk Space	350 MB disk space
Video Requirements	8 MB Video RAM
Resolution	256 colors

Table 5: HP-UX System Requirements for Remote Client

Item	Requirement
Models	9000/785/B2000 models
Processor	400 MHz PA-RISC
Hardware	CD-ROM
Operating System	HP-UX version 11.0 or greater
Memory	512 MB RAM (minimum)
Disk Space	350 MB disk space
Video Requirements	HP VISUALIZE-FXE color
Resolution	HP VISUALIZE-FXE color, 256 colors

Table 6: AIX System Requirements for Remote Client

Item	Requirement
Models	RS/6000 44P Model 170
Processor	333 MHz Power3-II
Hardware	CD-ROM
Operating System	AIX 4.3.3 or greater
Memory	512 MB RAM (minimum)

Table 6: AIX System Requirements for Remote Client

Item	Requirement
Disk Space	350 MB disk space
Video Requirements	16MB Video RAM
Resolution	256 colors

Upgrade Considerations

The following considerations apply when upgrading to this release:

- You cannot install the HAFM 8.x package on an existing notebook server due to memory and other limitations.

- You can only upgrade an HAFM appliance running HAFM 7.02.00 or greater to HAFM 8.x.

- After installing HAFM 8.x on an HAFM appliance all remote clients running down-level versions of the HAFM are required to re-install the client application.

- Once the HAFM appliance is upgraded to HAFM 8.x, any downgrade of HAFM to a previous release will result in the loss of saved firmware files.

- When migrating data from a notebook server to an HAFM appliance that is running HAFM 8.x, you can migrate data from the notebook server as a mapped (shared) drive. Both the notebook server and HAFM appliance must be on the same physical network. This may require additional hardware such as a hub or switch if an unused Ethernet port is not available.

- Exit all HAFM software running on the HAFM appliance and remote systems before upgrading. HAFM Services must be stopped on the appliance.

- The previous HAFM 7.x version will not be removed from an existing HAFM appliance during the HAFM 8.x upgrade process. After installing HAFM 8.x, you must uninstall the previous HAFM 7.x version before rebooting, because HAFM services for both versions start after reboot. Current HAFM data will not be removed, however, and will be available for migration to the new HAFM version.

- On failure of migration of any resource (switch) data, the migration continues. There is no recovery from a switch being unavailable before the start of migration other than running the install again.

- When upgrading a notebook server to an HAFM appliance running HAFM 8.x, or upgrading an HAFM appliance to HAFM 8.x from an earlier version, make sure that you obtain the serial number (on the software CD jewel case) and your license key for your installation. Refer to "Product License and Feature Keys" on page 40 for general information on license and feature keys.

- You must have System Administrator user rights for earlier versions of HAFM. Obtain a login ID and password with those rights.

■ The notebook server must be at version HAFM 6.0 or greater before you can migrate data to an HAFM appliance running HAFM 8.x. If not at release 6.0 or greater, upgrade to HAFM 7.1 or greater. Refer to upgrade instructions for the HAFM to which you are upgrading.

Note: The HAFM software must be version 7.01.00 or later to upgrade firmware on supported directors and switches to version 05.01.00 or later. If not, then you must upgrade the HAFM software to at least 7.01.00. For upgrade procedures, refer to the "Managing Firmware Versions" section in the service manual for your switch and director.

■ The firmware on switches and directors managed by HAFM 8.x must be at version 4.0 or greater. However, if you want HAFM management and administrative support for features in firmware 6.0, you should upgrade switches to that version.

Upgrade and Migration Procedures

This section describes upgrade/migration procedures for the following situations:

- Upgrading an existing HAFM appliance from HAFM 7.x to HAFM 8.x.
- Replacing a notebook server running HAFM 7.x or 6.x with an HAFM appliance running HAFM 8.x.

Upgrading an Existing HAFM Appliance

This section includes procedures to upgrade HAFM 7.x to HAFM 8.x on the 1U-high rack mount HAFM appliance.

Before Upgrading

Before beginning the upgrade procedure, complete the following tasks:

1. Read the "Upgrade Considerations" on page 22.

2. Get the license key listed as instructed on the entitlement request certificate that shipped with the product.

3. Make sure that you obtain the serial number (on the software CD jewel case) and your license key for your installation. Refer to "Product License and Feature Keys" on page 40 for more information.

4. If you use Call Home through dial-out, double-click the Call Home Setup icon on the Windows desktop of the HAFM appliance, and copy phone numbers and other pertinent details from the Network and Dial-up Connections - CallHome.pbk dialog box **Properties** tab so that you can use them to configure the Call Home feature in the new release. For details, refer to the *HP StorageWorks HA-Fabric Manager User Guide*.

5. Fully back up HAFM data on your HAFM appliance. To do this, copy the c:\HafmData directory to the HAFM appliance CD-RW drive where backups occur. Overwrite the existing files.

6. The password of the user name for the previous HAFM version cannot be blank; it must contain characters. If the password is blank, you must change it before using it later in this procedure.

7. To avoid errors, close all instances of the application before upgrading. Shut down HAFM on the appliance and on all remote workstations.

8. Stop HAFM services using the following steps:

   a. Select **Start >HP StorageWorks ha-fabric manager > Stop Services**. A DOS window displays with messages of services being shut down.

   b. Press any key to close the window.

Upgrade Procedure

1. Insert the software installation CD provided with your HAFM upgrade kit into the CD-ROM drive. If autorun is enabled, the installer begins automatically. If it is not enabled open the *<CD drive>*\Windows\setup.exe file.

   The InstallShield wizard will take you through the installation process.

2. When the Choose Destination Location dialog box displays, select the usual location for your system's application files (for example, c:\Program Files\HAFM 8.x) and click **Next**. HAFM 8.x refers to the version.

3. When the Start Menu Location dialog box appears, select a folder for HAFM icons and click **Next**.

4. HAFM 8.x files will install on your system.

5. Click **Finish**.

6. Open the application by double-clicking the HAFM desktop icon or by selecting **Start >Programs >HP StorageWorks ha-fabric manager > HAFM**.

   The Configuration Wizard displays the first time you open the application.

7. On the **Welcome** page, click **Next**. When the **License Agreement** screen displays, read the agreement and click **Yes**.

8. Click **Next**. The Copy Data and Settings dialog box displays.

Note: The wizard lets you copy data and settings from previous versions. To log in to the appliance and to monitor the SAN, you need system administrator level privileges for the previous release of the software. Make sure you have the user ID and password of the last appliance that was logged in. Leaving the user ID and password blank might cause errors.

Perform one of the following tasks:

— Click **Yes**. The default path to the required directory is `c:\Program Files\HAFM 8.x` on the HAFM appliance. If you are migrating data to an HAFM appliance and have shared the `c:\` (root) directory, and mapped to this directory from the HAFM appliance, be sure to use the drive letter used for mapping instead of `c:\`.

Note: If you selected the **Copy data and settings** option and you receive a message that the action failed, open an MS-DOS window and enter the following script: `Install_Service <startstatus> <runnow>` where *startstatus* parameter is `manual` or `auto` and *runnow* parameter is `true` or `false`.

This migrates data and settings from HAFM 7.x to HAFM 8.x. For a list of data migrated and not migrated, refer to "Data Migrated" on page 34.

Enter your HAFM 7.x login System Administrator user name and password.

Note: If the **User ID** and **Password** fields are left empty or if you enter incorrect information, you can continue, but data will not migrate. The password of the User ID for the previous HAFM version cannot be blank; it must contain characters. If the password is blank, you must change it before using it.

— Click **No** if you are not migrating data and settings to HAFM 8.x.

⚠ **Caution:** Your permanent license may not work properly if you choose not to copy data and settings.

If you select this and then later decide to migrate data from HAFM 7.x, you can perform one of the following steps:

— Reinstall HAFM 8.x and select **Yes** from this screen when you first bring up the HAFM application.

— Perform steps in "Migrating Data after Initializing HAFM 8.x" on page 32.

9. When the HAFM Server Name dialog box displays, enter a name of fewer than 20 characters (blank spaces are acceptable) for the HAFM appliance. Click **Next**.

10. When the HAFM 8.x Server License dialog box appears, enter your product's serial number and your license key.

   You are only required to enter a serial number and license key if you are upgrading to HAFM 8.x from an earlier HAFM version on the HAFM appliance. Refer to "Product License and Feature Keys" on page 40 for more information.

11. Click **Next**. A confirmation screen displays.

12. Click **Finish**. If you chose to migrate data, the migration will begin.

Note: IP addresses of unavailable switches will not be fully migrated.

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13. When the migration confirmation window displays, review the migration data.

   When the migration is complete, the application will open. If you chose not to migrate data, the application will start immediately.

14. When the HAFM 8 Log In dialog box displays, enter `Administrator` as the default user name and `password` as the password.
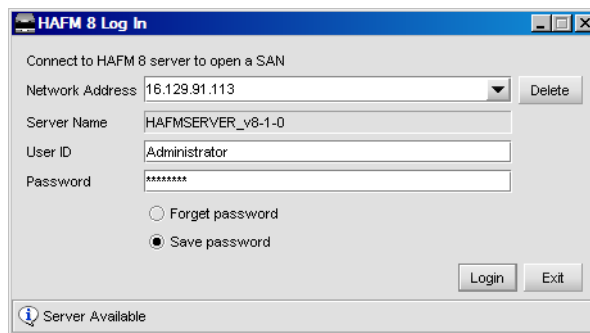
Figure 2: HAFM 8.x Login dialog box

Note: Once you log in, you can change the user ID and password for future logins.

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15. Click **Login**.

16. Refer to Chapter 2, "Getting a License Key for New Software" in the *HP StorageWorks HA-Fabric Manager User Guide*.

17. Refer to Chapter 2, "Setting Up the Application" in your *HP StorageWorks HA-Fabric Manager User Guide* for further instructions using the application.

18. After installing HAFM 8.x, if the previous HAFM 7.x version has not been uninstalled, you must uninstall it before rebooting. Otherwise HAFM services for both versions start after reboot.

Replacing Notebook Server with HAFM Appliance

Use the following procedure to replace a notebook server running HAFM 6.x or 7.x with a 1U-high rack-mount HAFM appliance running HAFM 8.x.

Considerations

Before replacing an HAFM notebook server with an HAFM appliance, consider the following:

■ These instructions assume that you have received an upgrade kit containing an HAFM appliance with HAFM 8.x installed. Instructions also assume that you have not already initialized the software on the new HAFM appliance by entering your license key and serial number.

Note: If you have not migrated data from the notebook server, but have already initialized the HAFM 8.x software on your HAFM appliance by entering your license key and serial number, follow steps in "Migrating Data after Initializing HAFM 8.x" on page 32.

■ The notebook server must be at version HAFM 6.0 or greater to migrate data to the HAFM appliance running HAFM 8.x.

■ Both the notebook server and HAFM appliance must be on the same physical network. This may require additional hardware such as a hub or switch if an unused Ethernet port is not available.

■ The HafmData directory and HAFM application directory must be on the same drive on the notebook server. Typically, these directories are c:\HafmData and c:\Program Files\HAFM respectively.

■ You must share the root drive (typically c:\) of the notebook server and map this drive on the HAFM appliance. This drive can be shared as "read-only." You can then migrate data from the notebook server using the Copy Data and Settings dialog box in the configuration wizard by browsing to the mapped drive.

Procedure

Follow these steps:

1. Make sure that you obtain the serial number (on the software CD jewel case) and your license key for your installation. Refer to "Product License and Feature Keys" on page 40 for more information.

2. If the notebook server is not running HAFM 6.0 or later, upgrade the server using instructions provided with your HAFM 6.0 upgrade kit.

3. Make sure the notebook and HAFM appliance are online and functioning.

4. Fully back up HAFM data on your notebook and HAFM appliance.

   — Notebook server. Copy the `c:\HafmData` directory to your Zip disk where backups occur.

   — HAFM appliance. Copy the following directories to your CD-ROM drive, where `<Install_Home>` is the directory where HAFM is installed:

     `<Install_Home>\Client`

     `<Install_Home>\Server`

     `<Install_Home>\Call Home`

5. Share the root drive on your notebook server containing your HAFM data directory and HAFM application (typically `c:\HafmData` and `c:\Program Files\HAFM`).

Note: You may have to work with your system administrator to share your `c:\` drive. Shared access can be read-only.

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   a. Double-click the **My Computer** icon on your Windows desktop to open the My Computer window.

   b. Right-click **Local Disk (c:)** and select **Sharing** from the pop-up menu.

   c. Select **Sharing > Share this folder**.

   d. Use the default Shared Name.

   e. Click **OK**. A hand icon displays by the folder name in Windows Explorer or My Computer to indicate that the folder is shared.

6. Map the shared c:\ drive on your HAFM appliance so that you can access files.

   a. Right-click **My Computer** and select **Map Network Drive** from the pop-up menu.

      The Map Network Drive dialog box displays. The HAFM folder name, preceded by your server name (computer name) should be available in the **Folder** drop-down list.

   b. Select the appropriate folder (see step 5).

   c. Click **Finish**.

7. Follow all instructions, beginning with step 6, in "Upgrade Procedure" on page 25, to finish the upgrade.

Migrating Data after Initializing HAFM 8.x

If you did not migrate HAFM data from a notebook server when you initialized the HAFM 8.x application on the HAFM appliance (in other words, you did not select **Yes** from the Copy Data and Settings screen), you still have two options for migrating this data.

Option 1: Reinstall HAFM Application

You can perform the following steps, depending on your upgrade situation:

Upgrading Existing HAFM Appliance to HAFM 8.x

Perform all steps in "Upgrading an Existing HAFM Appliance" on page 24.

Replacing Notebook Server with HAFM Appliance

Perform all steps in "Replacing Notebook Server with HAFM Appliance" on page 29.

Option 2: Using Doit Command

You can perform the following steps, depending on your upgrade situation:

Upgrading HAFM Appliance to HAFM 8.x

1. Make sure you have performed step 1 through step 6 in "Upgrading an Existing HAFM Appliance" on page 24.
2. Perform all steps in the "Editing HAFM_sc.bat File" on page 33.
3. Continue with step 7 in "Upgrading an Existing HAFM Appliance" on page 24.

Replacing Notebook Server with HAFM Appliance

1. Make sure you have performed step 1 through step 6 in "Replacing Notebook Server with HAFM Appliance" on page 29.
2. Perform all steps in the "Editing HAFM_sc.bat File" on page 33.
3. Continue with step 7 in "Replacing Notebook Server with HAFM Appliance" on page 29.

Editing HAFM_sc.bat File

Note: Perform these steps on your HAFM appliance (if replacing the notebook server with the HAFM appliance).

1. Shut down HAFM 8.x by selecting **Exit** from the **SAN** menu.
2. Right-click the HAFM 8.x icon on your desktop and select **Edit** from the pop-up menu.

    The `HAFM_sc.bat` file displays in your default editor (such as Notepad).
3. At the very end of the line that starts with the following string, add a space, then the word `doit`.

    `%JAVA_HOME%\bin\HAFMWizard.exe <software_switches> doit`

    The `<software_switches>` are a series of variables (switches).
4. Save and close the `HAFM_sc.bat` file.

Data Migrated

Specific data is migrated when you select the **Yes** option from the Copy Data and Settings dialog box when you upgrade HAFM software on your HAFM appliance. The following explains the data that is migrated and not migrated.

Data Migrated

Data stored in the `c:\HafmData` directory is migrated to the comparable data directories on the new appliance running HAFM 8.x. This includes user information, E-mail event configuration, threshold alert configurations and zoning configurations.

User Information

- User ID
- Password (encrypted in MD5 format)
- Username
- User rights
  - System Administrator -Transfers to HAFM 8.x as the System Administrator user group.
  - Product Administrator - transfers to HAFM 8.x as the Product Administrator user group.
  - Operator - transfers to HAFM 8.x as the Operator user group.
  - Maintenance - transfers to HAFM 8.x as the Maintenance user group.

E-Mail Event Configuration

All E-mail addresses entered in the HAFM 7.x Configure E-Mail dialog box will migrate to the E-mail Event Notification Setup "User List" under one user. You will have to modify the User List in HAFM 8.x to assign addresses to individual users.

FAF Libraries

File access facility (FAF) library data is migrated. This includes all information from the Configure Address - "Active" dialog box (FICON management style only) in HAFM 7.x Product Manager.

Firmware Library

The Firmware Library is migrated in the upgrade process, but release rules are not. Since release rules are required, an error will result when you attempt to send a firmware version in the library to a switch. To avoid this problem, add the latest firmware file to the firmware library. This will also add the new release rules and resolve the problem

Logs

HAFM audit, event, session, product status, and fabric log files are migrated to the same logs in HAFM 8.x. As a safeguard, you should export and archive these logs before migrating to HAFM 8.x.

Product Manager Audit, Event, Hardware, Link Incident, and Threshold Alerts are migrated.

Nicknames

Nicknames configured through the Configure Nicknames dialog box in HAFM are migrated.

Sessions Configuration

Information from the Configure Sessions dialog box is migrated. This includes:

■   Network addresses of computers allowed or prohibited from remote sessions.

■   Maximum number of remote sessions allowed.

SNMP Configuration

All data from the SNMP configuration is migrated. This includes the enable/disable flag and 12 rows of trap information that are configured in the HAFM Configure SNMP dialog box.

Switch Identification

All switches and directors identified in the HAFM 6.x or 7.x **Products View** are migrated into HAFM discovery and are placed in the **Selected Individual Addresses** table of the Discover Setup dialog box. These switches will be managed by HAFM 8.x. Note that if addresses did not "completely" migrate, you can enter the IP address of the switch or director in that dialog box.

Threshold Alert Configurations

Data input through the **Configure Threshold Alert** wizard in the Product Manager is migrated.

Zoning Configurations

Zones and zone sets are migrated to the default Zoning Library.

Data Not Migrated

The following types of information are not migrated:

■ Configurations for optional HAFM features, such as Open Trunking, SANtegrity Binding, Enterprise Management Mode, Persistent Fabrics, and FlexPort. You must obtain feature keys for these optional features to enable them.

■ Except for the firmware library, FAF files, and logs, other Product Manager data is not migrated since it is stored in switch memory for access by the Element Manager.

■ Files created using the **Backup and Restore Configuration** option in the Product Managers (NVRAM backup).

■ Performance data from the **Performance** view in the Product Manager.

■ Configuration information for switches that are not being managed locally are not included in the migration.

■ -If the Administrator user's password was changed in the previous version of HAFM, the password will not be migrated. Instead, it reverts to the default password (*password*).

Post-Upgrade Configuration Tasks

After upgrading to HAFM 8.x, you should perform the following tasks.

General HAFM Configuration

■ User Configuration. Perform tasks in Chapter 3 entitled "Configuring an HAFM Appliance" and "Managing Users" in the *HP StorageWorks HA-Fabric Manager User Guide*. Although user data from earlier HAFM versions is migrated, there are additional tasks that you must perform, such as configuring E-mail addresses and filtering event notifications.

■ Call-Home. To set up the call home feature, you first specify the support center information through the call home configuration (Call Home icon in the HAFM desktop). If you are upgrading from a previous release of the application, all of your call home settings will be preserved. You must also enable call home notification through the **Event Notification** option under the **Monitor** menu. For details refer to the *HP StorageWorks HA-Fabric Manager User Guide*.

■ Event Notification. This includes configuring E-mail and call home event notification. Refer to "Comparing HAFM 7.x and 8.x Features" on page 45.

Note that all E-mail addresses entered in the HAFM 6.x or 7.x Configure E-Mail dialog box will migrate to the HAFM 8.x E-mail Notification Setup "User List" under one user. You will have to modify the User List in HAFM 8.x to assign addresses to individual users. Refer to the *HP StorageWorks HA-Fabric Manager User Guide* for instructions.

■ Configuring SAN devices. Perform applicable procedures in the *HP StorageWorks HA-Fabric Manager User Guide*. This includes steps for configuring Enterprise Fabric Mode (if installed), configuring fabric binding (if installed), and configuring trap forwarding.

Upgrading Remote Clients

To log into the HAFM appliance as a remote client and use HAFM 8.x, you must download the client application to your system. Supported operating systems include Windows, Solaris, HP-UX, AIX, and LINUX.

To upgrade an HAFM client on a remote system, use the following procedure.

1. Make sure that HAFM is not running on the remote machine.

2. Open an Internet browser.

3. Type the IP address of the HAFM appliance in the **Location** (or **Address**) box on the browser, then press **Enter**.

4. When the remote client installation screen displays, select the appropriate download for your operating system.

5. Follow instructions in the configuration wizard to install the client to your system.

6. To start the application:

   — On Windows systems, select the **Start** > **Programs > HP HAFM > HAFM 8.x** to open the application.

   — On Unix systems, enter `./HAFM_Client`.

Reverting to Prior HAFM Version

Following are instructions for reverting back from HAFM 8.x to HAFM 7.x on the HAFM appliance.

1. As described in step 5 on page 24, locate the backed up HAFM 7.x `c:\HafmData` directory.

2. Remove HAFM 8.x using steps in "Uninstalling the Application" in Chapter 1 of the *HP StorageWorks HA-Fabric Manager User Guide*.

   If you do not want to remove HAFM 8.x at this time, you must reconfigure HAFM 8.x Services to start manually instead of automatically. You cannot run HAFM 8.x and earlier HAFM Services at the same time when the HAFM appliance is rebooted. To do this:

   a. Make sure that HAFM 8.x is running.

   b. Select **Start** > **Settings** > **Control Panel**.

   c. Select **Administrative Tools**.

   d. Select the **Services**. The Services dialog box displays.

   e. Double click each of the following services, one at a time, to display a Properties dialog box. Change the **Startup type** to **Manual** using the drop-down list and click **OK**.

      — Backup Manager

      — Call Home Service

      — HAFM Service

3. Copy the HAFM 7.x `\HafmData` directory from the CD-RW to `c:\` on the HAFM appliance hard drive (refer to step 1).

4. Install HAFM 7.x.

5. Start the HAFM Services (make sure that HAFM 7.x is running).

6. Launch the HAFM client and log on to the HAFM appliance.

> **Caution:** Once the HAFM appliance is upgraded to release HAFM 8.x, any downgrade of HAFM to a previous release will result in the loss of saved firmware files.

Product License and Feature Keys

License keys are unique strings of alphanumeric characters that verify ownership of HAFM software and additional software modules that you can purchase.

Feature keys are unique strings of alphanumeric characters that verify ownership of an Element Manager application for a specific switch and the additional features that you purchase for that Element Manager.

License Keys

The use of license keys is new for HAFM 8.x. You must enter a license key provided with your software and a software serial number the first time that you initialize HAFM 8.x if you are:

■ Upgrading an HAFM appliance from HAFM 7.2 to HAFM 8.x.

■ Replacing a notebook server running HAFM 7.x or 6.x with an HAFM appliance running HAFM 8.x.

An updated license key is supplied for optional software modules that you purchase for the HAFM 8.x application on an HAFM appliance. To enable the new software module, you must enter this key into the License dialog box, which is available from the **Help** menu, **License** option in HAFM.

Obtaining a License Key

You need to obtain a license key when upgrading software on an existing HAFM appliance to HAFM 8.x or when replacing a notebook server with an HAFM appliance running HAFM 8.x.

The kit provides a software serial number on the CD jewel case and a software entitlement request certificate for HAFM. The certificate contains instructions to retrieve the license key from the web site.

For complete instructions, refer to the *HP StorageWorks HA-Fabric Manager User Guide*.

Optional Software Modules

If you order additional port support or software modules after your initial purchase of HAFM 8.x, you must perform the following procedure:

1. When the HAFM application is running, select **License** from the HAFM Help menu to display the License dialog box.

2. Enter the permanent key in the **License Key** field and click **Update**.

3. Click **OK**.

The software license key will allow you to access HAFM and all optional software modules that you have purchased. Your kit documents will provide a new feature enablement certificate, based on the number of ports that you want to support. To obtain a license key, follow instructions on the enablement certificate to obtain a license key.

Feature Keys

Feature keys are unique strings of alphanumeric characters that enable the Element Manager for a specific switch and the additional features that you purchase for that switch. The feature key, which is encoded with a switch or director's serial number, can only be configured on the switch or director to which it is assigned.

Here are some important notes about the Element Manager feature key for this release:

■ There are two situations when you must contact customer support to receive an updated Element Manager feature key for an existing HP fabric. Note that you will still be able to manage the product, but you will receive warnings that you do not have a valid license.

— If the director or switch was upgraded to firmware 6.0 and you reset the default settings through the Element Manager's **Reset Configuration** option.

— If the director or switch was upgraded to 6.0 and you renter a feature key created before firmware 6.0 release, the Element Manager key will be deleted.

- Enabling the **Reset Configuration** option through the Element Manager **Maintenance** menu clears all features that were enabled through the Configure Feature Key dialog box. When you attempt to re-install features using a feature key assigned for version firmware 5.x, a warning will instruct you that the Element Manager feature key is not installed. You must contact customer support to get a feature key reassigned.

- As a new addition for HAFM 8.x, access to the Element Manager is provided through a feature key. If you do not have a feature key for an Element Manager, messages may display indicating this. Also, if you try to access a feature without Element Manager support, a message may display explaining that Element Manager support has not been installed. In these cases, you must contact your sales representative to obtain a feature key.

Note: Switches and directors on existing HP fabrics, whether running a firmware version earlier than 6.0 or upgraded to firmware 6.0, will not require Element Manager feature keys.

- For directors and switches shipped with firmware 6.0 or later installed:
  - Directors - The Element Manager enablement certificate is included with the unit as shipped.
  - Switches - The Element Manager is optional. When you want to manage a switch through an Element Manager, you will receive an enablement certificate with which you can obtain a Feature Key. You must activate this key through the Configure Feature Key dialog box.

- As you purchase additional Element Manager features, you will receive a an enablement certificate with which you can obtain a Feature Key.

Enabling a Feature Key

To enable a feature key in the switch or director Element Manager:

1. Select **Features** from the **Configure** menu to display the Configure Feature Key dialog box.

2. Click **New** to add a new feature key. The New Feature Key dialog box displays.

3. Enter the switch or director feature key and click **OK**.

Comparing HAFM 7.x and 8.x Features

2

This chapter compares features in HAFM 7.x and HAFM 8.x.

This chapter includes:

Introduction

This chapter provides a basic description of the features in HAFM 8.x that are comparable with features in HAFM 7.x.

Detailed procedures for using all HAFM 8.x features, are located in the *HP StorageWorks HAFM User Guide*.

Finding 7.x Features in HAFM 8.x

Table 7 provides a quick reference for locating comparable HAFM 7.x features in HAFM 8.x. For specific information about using HAFM, refer to the *HP StorageWorks HA-Fabric Manager User Guide*.

Table 7: Comparing HAFM 7.x and 8.x Feature Locations

Feature	HAFM 7.x Menu>Submenu: Options	HAFM 8.x Menu>Submenu: Options
Identifying products to HAFM	Product>New, Delete, Modify Toolbar: New Product	■ Discover> Setup ■ Toolbar: Discover Setup
Display product properties	Product>Properties Product right-click menu> Properties	■ Product right-click menu> Properties. ■ Toolbar: Properties
Logging out of HAFM	Product>Logout	SAN>Log Out
Rename Fabric	Fabrics>Rename	Cannot rename. (Can create new nickname in Properties dialog box.)
Persist Fabric	Fabrics> Persist Fabric Topology, Unpersist Fabric Topology Toolbar: Persist Fabric Topology	■ Configure>Persist Fabric, Unpersist Fabric ■ Right-click menu on fabric in Physical Map or Product List> Persist Fabric, Unpersist Fabric
Export Fabric Topology	Fabrics: Export Fabric Topology Toolbar: Export Fabric Topology	■ SAN>Export ■ Toolbar: Export (Select Product List and Physical Map from Export Discovered SAN dialog box.
Show route	Fabrics>Show Route/Hide Route	Configure>Show Route and Hide Route
Show zone members	Fabrics>Show Zone Members	Configure>List Zone Members
Show magnified fabric view	Fabrics>Show View Port	View>Show All Panels (displays Minimap)
Show tree containing fabric, product, device branches	Fabrics>Show Fabric Tree	View>All Panels or Fabric List

Table 7: Comparing HAFM 7.x and 8.x Feature Locations (Continued)

Feature	HAFM 7.x Menu>Submenu: Options	HAFM 8.x Menu>Submenu: Options
Enterprise Fabric Mode (if enabled)	Fabrics>Enterprise Fabric Mode	■ Configure>Enterprise Fabric Mode ■ Right click menu on fabric in Physical Map or Product List> Enterprise Fabric Mode
Fabric Binding (if enabled)	Fabrics>Fabric Binding	■ Configure>Fabric Binding ■ Right-click menu on fabric on fabric in Physical Map or Product List>Fabric Binding
View user HAFM sessions	View>User Sessions	SAN>Active Sessions
Zoom out of and into topology diagram	View>Zoom	■ View>Zoom ■ Physical Map Toolbar: + and - icons ■ Right-click menu on empty areas of Physical Map
Arrange and layout icons in topology, center in topology, refresh topology	View>Layout Icons, Center in Topology, Refresh Topology	Not available.
Clear ISL alerts	■ View>Clear ISL Alert, Clear All ISL Alerts ■ Right-click menu on ISL in Fabrics view ■ Right-click menu on fabric in Fabrics view	Right-click connection in persisted fabric that displays an ISL alert and select Clear ISL Alert(s). ISL alert is a yellow triangle containing an exclamation mark.
Enable fly-over display	View>Enable Fly Over Display	View>Enable Flyover Display
Configure user administration	Configure>Users	SAN>Users Toolbar>HAFM Users
Configure user sessions	Configure>Sessions	SAN>Remote Access

Table 7: Comparing HAFM 7.x and 8.x Feature Locations (Continued)

Feature	HAFM 7.x Menu>Submenu: Options	HAFM 8.x Menu>Submenu: Options
Configure nicknames for products and fabrics	■ Configure>Nicknames ■ Right-click menu on product in Fabric Tree and Fabrics view ■ Right-click menu on fabric in Fabrics view	■ View>Properties (when product selected in Physical Map or Product List). Enter nickname in Nickname field. ■ Toolbar>Properties (when product selected in Physical Map or Product List). Enter nickname in Nickname field. ■ Right-click menus on fabric and product in Physical Map and Product List>Properties. Enter nickname in Nickname field.
Configure SNMP agent	Configure>SNMP Agent	■ Monitor>SNMP Agent (On, Off, Setup) ■ Monitor>Trap Forwarding
Activate zone set	Configure>Activate Zone Set	Configure>Zoning (Select **Activate** in the Zoning dialog box)
Zoning library	Configure>Zoning Library Toolbar: Show Zoning Library	■ Configure>Zoning ■ Right-click menu on fabric or product in Physical Map ■ Right-click menu on fabric or product in Product List ■ Toolbar: Zoning
Deactivate zone set	Configure>Advanced Zoning > Deactivate Zone Set	Configure>Zoning (Select Deactivate button on Zoning dialog box)
Configure default zone	Configure>Advanced Zoning > Configure Default Zone	Configure>Zoning (Select Default Zone button on Zoning dialog box)

Table 7: Comparing HAFM 7.x and 8.x Feature Locations (Continued)

Feature	HAFM 7.x Menu>Submenu: Options	HAFM 8.x Menu>Submenu: Options
Audit, Event, Session, Product Status, Fabric logs	Logs>Audit, Event, Session, Product Status, Fabric	Monitor>Logs>Audit, Event, Session, Product Status, Fabric
Configure email	Maintenance>Configure Email	Monitor>Event Notification>Email
Test email notification	Maintenance>Test Remote Notification	Monitor>Event Notification>Email (Test Email button on Configure Email dialog box)
Configure Ethernet events	Maintenance>Configure Ethernet Events	Monitor>Ethernet Event
Configure call home event notification	Maintenance>Configure Call Home Event Notification	Monitor>Event Notification>Call Home
Help	Help>Contents Help>About	■ Help>Contents ■ Help>About HAFM 8
Open Product Manager	Right-click menu on product icon (Products view)>Open Toolbar: Open Product	Right-click menu on product icon (Physical Map)>Element Manager Toolbar: Launch Element Manager
Delete product from HAFM	Right-click menu on product icon (Products view)>Delete	Right-click menu on product icon (Physical Map)>Delete
Display product properties	Right-click menu on product icon (Products view)>Properties	Right-click menu on product icon (Physical Map)>Properties Toolbar: Properties

Table 7: Comparing HAFM 7.x and 8.x Feature Locations (Continued)

Feature	HAFM 7.x Menu>Submenu: Options	HAFM 8.x Menu>Submenu: Options
Modify product network address	Right-click menu on product icon (Products view)>Modify	■ Discover>Setup (Change button on Discover Setup dialog box) ■ View>Properties (when product selected in Physical Map or Product List). Enter nickname in Nickname field. ■ Toolbar: Properties (when product selected in Physical Map or Product List). Enter address in IP Address field. ■ Right-click menus on fabric and product in Physical Map and Product List>Properties. Enter address in IP Address field.
Display fabric properties	Right-click menu on fabric in Fabric Tree and Fabrics view>Properties	Right-click menu on fabric in Product List and Physical Map>Properties
Change product label display	Toolbar: pulldown list: ■ Product Name ■ Network Address ■ World Wide Name ■ Domain ID ■ Nickname (Changes label on Fabrics view)	Toolbar: pulldown list: ■ Name ■ Nickname ■ Node Name ■ IP Address ■ Domain ID (Changes label on Physical Map and Product List)

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